Amendment to Claims

Claim 1 (currently amended): A method comprising:

receiving a downstream management message at a client termination device, the client termination device comprising a data buffer, the downstream management message comprising one or more bandwidth allocation elements and a cyclic redundancy code (CRC);

storing bandwidth allocation information based upon selected ones of the bandwidth allocation elements in a the data buffer; and

outputting the stored bandwidth allocation information from the data buffer in response to detecting a validation of the CRC.

Claim 2 (original): The method of claim 1, wherein the method further comprises:

associating one or more bandwidth allocation elements with the client termination device based upon service identifier information; and

for each bandwidth allocation element associated with the client termination device, storing bandwidth allocation information based upon the bandwidth allocation element in the data buffer.

Claim 3 (original): The method of claim 1, wherein the method further comprises:

sequentially storing bandwidth allocation information based upon one or more bandwidth allocation elements in a first-in-first-out data buffer at locations indicated by a write pointer;

advancing the write pointer after storing bandwidth allocation information for each bandwidth allocation element; and

resetting the write pointer to an initial position upon detection of an invalid CRC in the downstream management message.

Claim 4 (original): The method of claim 1, wherein the one or more upstream bandwidth allocation elements comprise at least one data grant bandwidth allocation element and at least one data grant pending bandwidth element.

Claim 5 (original): The method of claim 4, wherein the method further comprises scheduling an upstream transmission for a bandwidth allocation element associated with a data grant bandwidth allocation element message upon detecting a validation of the CRC.

Claim 6 (original): The method of claim 1, wherein the method further comprises:

storing message header data in one or more first locations in a first-in-first-out (FIFO) data buffer, the message header data being based upon a message header in the downstream management message; and

storing the bandwidth allocation information in subsequent locations in the FIFO data buffer.

Claim 7 (original): The method of claim 6, wherein the method further comprises:

storing the message header data in the FIFO data buffer at locations indicated by a write pointer;

advancing the write pointer to one or more of the subsequent locations;

storing the bandwidth allocation information in the subsequent locations; and

upon completion of storing the bandwidth information in the subsequent locations, storing data in the FIFO data buffer between the first locations and the subsequent locations.

Claim 8 (original): The method of claim 7, wherein the method further comprises storing statistical information derived from the bandwidth allocation elements between the first locations and the subsequent locations.

Claim 9 (currently amended): A device comprising:

logic to receive a downstream management message at a client termination device, the downstream management message comprising one or more bandwidth allocation elements and a cyclic redundancy code (CRC);

~~logic to store bandwidth allocation information in~~ a data buffer to store bandwidth allocation information based upon selected ones of the bandwidth allocation elements; and

logic to output the stored bandwidth allocation information from the buffer in response to detecting a validation of the CRC.

Claim 10 (original): The device of claim 9, the device further comprising:

logic to associate one or more bandwidth allocation elements with the client termination device based upon service identifier information; and

logic to store bandwidth allocation information in the data buffer for each bandwidth allocation element associated with the client termination device.

Claim 11 (original): The device of claim 9, the device further comprising:

logic to sequentially store bandwidth allocation information for the selected bandwidth allocation elements in a first-in-first-out data buffer at locations indicated by a write pointer;

logic to advance the write pointer after storing bandwidth allocation information for each bandwidth allocation element; and

logic to reset the write pointer to an initial position upon detection of an invalid CRC in the downstream management message.

Claim 12 (original): The device of claim 9, wherein the one or more bandwidth allocation elements comprise at least one data grant bandwidth allocation element and at least one data grant pending bandwidth allocation element.

Claim 13 (original): The device of claim 12, the device further comprising logic to schedule an upstream transmission for a bandwidth allocation element associated with a data grant bandwidth allocation element message upon a validation of the CRC.

Claim 14 (original): The device of claim 9, wherein the method further comprises:

logic to store message header data in one or more first locations in a first-in-first-out (FIFO) data buffer, the message header data being based upon a message header in the downstream management message; and

logic to store the bandwidth allocation information in subsequent locations in the FIFO data buffer.

Claim 15 (original): The device of claim 14, the device further comprising:

logic to store the message header data in the FIFO data buffer at locations indicated by a write pointer;

logic to advance the write pointer to one or more of the subsequent locations;

logic to store the bandwidth allocation information in the subsequent locations; and

logic to store data in the FIFO data buffer between the first locations and the subsequent locations upon completion of storing the bandwidth allocation information in the subsequent locations.

Claim 16 (original): The device of claim 15, wherein the device further comprises logic to store statistical information derived from the bandwidth allocation elements between the first locations and the subsequent locations.

Claim 17 (currently amended): A system comprising:

a host processing system;

a data bus coupled to the host processing system; and

a client termination device coupled to the data bus, the client termination device comprising:

a processing circuit; and

a receiving circuit comprising:

logic to receive a downstream management message from transmission medium coupled to a client termination device, the downstream management message comprising one or more bandwidth allocation elements and a cyclic redundancy code (CRC);

~~logic to store bandwidth allocation information in~~ a data buffer to store bandwidth allocation information based upon selected ones of the bandwidth allocation ~~messages~~ elements; and

logic to output the stored bandwidth allocation ~~elements~~ information from the data buffer to the processing circuit in response to detecting a validation of the CRC.

Claim 18 (original): The system of claim 17, wherein the system further comprises logic to initiate a DMA transaction on the data bus in response to the processing circuit.

Claim 19 (original): The system of claim 17, wherein the system further comprises a cable modem termination system coupled to the client termination device by a transmission medium.

Claim 20 (original): The system of claim 17, wherein the receiving circuit further comprises:

logic to associate one or more bandwidth allocation elements with the client termination device based upon service identifier information; and

logic to store bandwidth allocation information in the data buffer for each bandwidth allocation element associated with the client termination device.

Claim 21 (original): The system of claim 17, wherein the receiving circuit further comprises:

logic to sequentially store bandwidth allocation information based upon the selected bandwidth allocation elements in a first-in-first-out data buffer at locations indicated by a write pointer;

logic to advance the write pointer after storing bandwidth allocation information for each bandwidth allocation element; and

logic to reset the write pointer to an initial position upon detection of an invalid CRC in the downstream management message.

Claim 22 (original): The system of claim 17, wherein the one or more bandwidth allocation elements comprise at least one data grant bandwidth allocation element and at least one data grant pending bandwidth allocation element.

Claim 23 (original): The system of claim 22, wherein the receiving circuit further comprises logic to schedule an upstream transmission for each bandwidth allocation element associated with a data grant bandwidth allocation element upon detecting a validation of the CRC.

Claim 24 (original): The system of claim 17, wherein the receiving circuit further comprises:

logic to store message header data in one or more first locations in a first-in-first-out (FIFO) data buffer, the message header data being based upon a message header in the downstream management message; and

logic to store the bandwidth allocation information in subsequent locations in the FIFO data buffer.

Claim 25 (original): The system of claim 24, wherein the receiving circuit further comprises:

logic to store the message header data in the FIFO data buffer at locations indicated by a write pointer;

logic to advance the write pointer to one or more of the subsequent locations;

logic to store the bandwidth allocation information in the subsequent locations; and

logic to store data in the FIFO data buffer between the first locations and the subsequent locations upon completion of storing the bandwidth information in the subsequent locations.

Claim 26 (original): The system of claim 25, wherein the receiving circuit further comprises logic to store statistical information derived from the bandwidth allocation elements between the first locations and the subsequent locations.

Claim 27 (currently amended): An apparatus comprising:

means for receiving a downstream management message at a client termination device, the client termination device comprising a data buffer, the downstream management message comprising one or more bandwidth allocation elements and a cyclic redundancy code (CRC);

means for storing bandwidth allocation information based upon selected ones of the bandwidth allocation elements in a the data buffer; and

means for outputting the stored bandwidth allocation information from the buffer in response to detecting a validation of the CRC.

Claim 28 (original): The apparatus of claim 27, the apparatus further comprising:

means for associating one or more bandwidth allocation elements with the client termination device based upon service identifier information; and

means for storing bandwidth allocation information in the data buffer for each bandwidth allocation element associated with the client termination device.

Claim 29 (original): The apparatus of claim 27, the apparatus further comprising:

means for sequentially storing bandwidth allocation information based upon one or more bandwidth allocation elements in a first-in-first-out data buffer at locations indicated by a write pointer;

means for advancing the write pointer after storing bandwidth allocation information for each bandwidth allocation message; and

means for resetting the write pointer to an initial position upon detection of an invalid CRC in the downstream management message.

Claim 30 (original): The apparatus of claim 27, wherein the one or more upstream bandwidth allocation elements comprise at least one data grant bandwidth allocation element and at least one data grant pending bandwidth allocation element.

Claim ~~28~~ 31. (currently amended): The apparatus of claim 27, wherein the apparatus further comprises means for scheduling an upstream transmission for a bandwidth allocation element associated with a data grant bandwidth allocation element message upon detecting a validation of the CRC.

Claim ~~29~~ 32. (currently amended): The apparatus of claim 24, wherein the apparatus further comprises:

means for storing message header data in one or more first locations in a first-in-first-out (FIFO) data buffer, the message header data being based upon a message header in the downstream management message; and

means for storing the bandwidth allocation elements in subsequent locations in the FIFO data buffer.